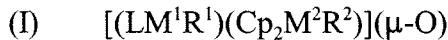


**Listing of the Claims:**

The following is a complete listing of all the claims in the application, with an indication of the status of each:

1. (Original) A binuclear, oxygen-bridged, bimetallic complex of the general formula I:



where:

$\text{M}^1$  = Al, Ge, Zr or Ti;

$\text{M}^2$  = Zr, Ti, or Hf;

Cp = cyclopentadienyl;

$\text{R}^1, \text{R}^2$  = H'; C(1-6) alkyl; halogen; aryl; SiMe<sub>3</sub>; and alkaryl where aryl = C<sub>6</sub>H<sub>5-n</sub>X<sub>n</sub>

X = halogen, C(1-6) alkyl, aryl NO<sub>2</sub>, SO<sub>3</sub>H, NR<sup>3</sup>, where R<sup>3</sup> = C(1-6) alkyl or H

and n = 0 to 5; and

L = a bidentate, doubly heteroatom-coordinated organochemical ligand which together with the metal M<sup>1</sup> forms a 5- or 6-membered ring.

2. (Currently amended) The binuclear, oxygen-bridged, bimetallic complex as claimed in claim 1, in which

$\text{R}^1, \text{R}^2$  = methyl, ethyl, i-propyl, t-butyl, halogen, phenyl, alkylphenyl, and SiMe<sub>3</sub>, and

L is a bidentate, doubly nitrogen-coordinated organochemical ligand which, together with the metal M<sup>1</sup>, forms the [[a]] 5- or 6-membered ring.

3. (Currently amended) The binuclear, oxygen-bridged, bimetallic complex as claimed in claim 1, characterized in that it is a heterobimetallic complex, preferably on in which wherein M<sup>1</sup> = Al aluminum and M<sup>2</sup> = Zr zirconium, more preferably a complex of the formula [(LA1Me)[Cp<sub>2</sub>ZrR<sup>2</sup>](-O)], where R<sup>2</sup> is Me or Cl.

4-5. (Canceled)

6. (Currently amended) A process for preparing a binuclear, oxygen-bridged,

bimetallic complex of the general formula I:

(I)  $[(LM^1R^1)(Cp_2M^2R^2)](\mu-O)$

where:

$M^1 = Al, Ge, Zr$  or  $Ti;$

$M^2 = Zr, Ti$  or  $Hf;$

$Cp = cyclopentadienyl;$

$R^1, R^2 = H'; C(1-6) alkyl; halogen; aryl; SiMe_3;$  and alkaryl where aryl =  $C_6H_{5-n}X_n$

$X = halogen, C(1-6) alkyl, aryl NO_2, SO_3H, NR^3_2,$  where  $R^3 = C(1-6) alkyl$  or  $H$

and  $n = 0$  to  $5;$  and

$L = a bidentate, doubly heteroatom-coordinated organochemical ligand which$   
together with the metal  $M^1$  forms a 5- or 6-membered ring,

comprising the step of reacting as claimed in claim 1 characterized in that a  
precursor complex of the formula  $LM^1R^1(OH)$  is reacted with a metallocene  
precursor complex[[.] selected from  $Cp_2M^2(R^2)_2$  or  $Cp_2M^2MeR^2$  or  $Cp_2M^2HX'$   
where  $X'$  is a halogen, where  $x = halogen,$  preferably in an inert solvent.

7. (Currently amended) A catalyst preparation for the polymerization of olefins  
which comprises

at least one complex as claimed in claim 1 of the general formula I:

(I)  $[(LM^1R^1)(Cp_2M^2R^2)](\mu-O)$

where:

$M^1 = Al, Ge, Zr$  or  $Ti;$

$M^2 = Zr, Ti$  or  $Hf;$

$Cp = cyclopentadienyl;$

$R^1, R^2 = H'; C(1-6) alkyl; halogen; aryl; SiMe_3;$  and alkaryl where aryl =  $C_6H_{5-n}X_n$

$X = halogen, C(1-6) alkyl, aryl NO_2, SO_3H, NR^3_2,$  where  $R^3 = C(1-6) alkyl$  or  $H$

and  $n = 0$  to  $5;$  and

$L = a bidentate, doubly heteroatom-coordinated organochemical ligand which$   
together with the metal  $M^1$  forms a 5- or 6-membered ring, and

at least one cocatalyst.

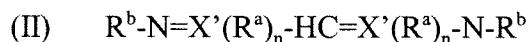
8. (Currently amended) The catalyst preparation as claimed in claim 7,  
characterized in that wherein the at least one cocatalyst is an alkyl-alumininoxane;

preferably methylalumininoxane (MAO).

9-11. (Canceled)

12. (New) The binuclear, oxygen-bridged bimetallic complex as claimed in claim 3 wherein R<sup>2</sup> is Me or Cl.

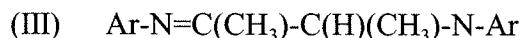
13. (New) The binuclear, oxygen-bridged, bimetallic complex as claimed in claim 1 wherein the ligand L is defined by formula II:



where X' = C or P; and

R<sup>a</sup>, R<sup>b</sup> = R<sup>1</sup>, and n = 1 when X = C, and n = 2 when X = P.

14. (New) The binuclear, oxygen-bridged, bimetallic complex as claimed in claim 1 wherein the ligand L is defined by formula III:



where Ar is an aryl.

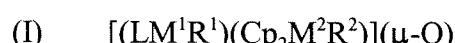
15. (New) The binuclear, oxygen-bridged, bimetallic complex as claimed in claim 14 where in Ar is 2, 6-iPr<sub>2</sub>C<sub>6</sub>H<sub>3</sub> where iPr is isopropyl.

16. (New) The method of claim 6 wherein said reacting step is performed in an inert solvent.

17. (New) The catalyst preparation of claim 8 wherein said alkyl-alumininoxane is methylalumininoxane.

18. (New) A method of catalytically polymerizing polymers, comprising the steps of:

combining materials to be polymerized with a binuclear, oxygen-bridged, bimetallic complex of the general formula I:



where:

M<sup>1</sup> = Al, Ge, Zr or Ti;

M<sup>2</sup> = Zr, Ti, or Hf;

Cp = cyclopentadienyl;

R<sup>1</sup>, R<sup>2</sup> = H'; C(1-6) alkyl; halogen; aryl; SiMe<sub>3</sub>; and alkaryl where aryl = C<sub>6</sub>H<sub>5-n</sub>X<sub>n</sub>

X = halogen, C(1-6) alkyl, aryl NO<sub>2</sub>, SO<sub>3</sub>H, NR<sup>3</sup><sub>2</sub>, where R<sup>3</sup> = C(1-6) alkyl or H  
and n = 0 to 5; and

L = a bidentate, doubly heteroatom-coordinated organochemical ligand which  
together with the metal M<sup>1</sup> forms a 5- or 6-membered ring, and

polymerizing the materials using said binuclear, oxygen-bridged,  
bimetallic complex as a catalyst.

19. (New) The method of claim 18 wherein said combining step includes the step  
of adding an alkyl-aluminoxane, trialkyaluminum, or alkylhaloaluminum  
cocatalyst to said materials and said binuclear, oxygen-bridged, bimetallic  
complex.

20. (New) the method of claim 19 wherein said cocatalyst is methylaluminoxane.